

## CLAIMS

Sub B2  
1. A method of printing information on each article of a set of articles arranged in generally parallel lanes, at a printing station, the method including continuously moving a printing apparatus relative to the lanes to bring the printing apparatus into registry with each article of the set in turn, and at each registry position, whilst continuing to move the printing apparatus, moving a print head of the apparatus relative to the respective article to a printing position in which the print head is capable of printing information on the article, continuing to move the printing apparatus relative to the article whilst effecting printing with the print head, and when the information is printed, whilst continuing to move the printing apparatus, moving the print head out of the printing position.

Sub A1  
2. A method according to claim 1 characterised in that the printing apparatus is mounted on a carriage and the method includes continuously moving the carriage transversely across the lanes, relative to a base structure relative to which each of the articles of the set is held stationary during printing.

3. A method according to claim 2 characterised in that the carriage is moved transversely of the lanes at a generally constant speed.

4. A method according to any one of the preceding claims characterised in that all of the articles of the set positioned at the printing station simultaneously whilst the printing apparatus is moved transversely across all the lanes.

5. A method according to any one of claims 1 to 3 characterised in that the articles are conveyed severally in their respective lanes, to the printing station, and are arranged to be present at the printing station so that the printing apparatus may be moved into registry with the articles and printing performed, whilst the printing apparatus is continuously moved.

6. A method according to any one of the preceding claims characterised in that the printing apparatus includes a housing mounted on the carriage, and print head movement to and from the printing position is relative to the housing of the printing apparatus.

7. A method according to any one of the preceding claims characterised in that the print head is of the kind having a plurality of printing elements which are selectively actuated during printing by a control means to effect printing of desired information on each of the articles.

8. A method according to any one of the preceding claims characterised in that the printing apparatus is a thermal printer in which there are printing elements arranged in a generally linear array along the print head with the array extending generally transversely to the direction of movement of the printing apparatus across the lanes, the method including selectively energising the printing elements during printing to remove pixels of marking medium from a carrier positioned between the printing elements and the article.

9. A method according to claim 8 characterised in that the method includes moving the carrier relative to the print head as the printing apparatus moves transversely of the lanes of articles during printing, so as that fresh carrier is continually be positioned between the print head and the article on which information is being printed.

Sub  
B1  
concluded

10. A method according to claim 8 or claim 9 characterised in that the printing apparatus includes a housing within which there is provided a storage spool for unused carrier, a take-up spool for used carrier, a first motive means to move at least the take-up spool to take up used carrier, and a second motive means to move the print head to and from the printing position.

11. A method according to any one of the preceding claims which includes conveying the articles of the set in their parallel lanes to the printing station, arresting movement of the set of articles at the printing station while the information is printed on each of the articles of the set.

Sub  
B2  
cont

12. A method of printing information on each article of a set of articles arranged in generally parallel lanes, at a printing station, the method including continuously moving a printing apparatus relative to the lanes to bring the printing apparatus into registry with each article of the set in turn, the printing apparatus including a print head and a carrier for marking medium which is applied to the articles during printing, and at each registry position, whilst continuing to move the printing apparatus, effecting printing with the print head, and when the information is printed, continuing to move the printing apparatus to the next registry position.

Sub  
B2

13. A method according to claim 12 characterised in that the method is applied to printing apparatus having a thermal print head having printing elements which are selectively energised during printing to melt and remove pixels of marking medium from the carrier and deposit the pixels of ink on to the articles.

2042101 FEB 2000

14. A method according to claim 12 characterised in that the method is applied to an ink jet type printer in which the marking medium is contained in a reservoir and selectively applied by jetting, onto the articles to print the information.

15. A method according to claim 12 or claim 13 characterised in that method includes any of the features of the method of claims 1 to 11.

Sub B3  
16. A printing station for performing the method of any one of the preceding claims, the printing station including a carriage, a printing apparatus, means to mount the printing apparatus on the carriage, means to move the carriage and thus the printing apparatus transversely of a plurality of lanes and to effect printing on each of a plurality of articles at the printing station, each of the articles being located in one of the lanes, characterised in that the means to move the carriage is adapted to move the carriage substantially continuously across the lanes and the printing apparatus being adapted to print the information on each of the articles of the set in turn without or substantially without stopping.

17. A station according to claim 16 characterised in that the carriage is mounted on a gantry which extends over or under the lanes and the printing apparatus is moved over or under the lanes respectively, on the carriage.

18. A station according to claim 17 characterised in that the gantry and/or the carriage includes a drive means for moving the carriage.

Sub A4  
19. A station according to claim 16 or claim 17 characterised in that movement of the carriage is controlled by a control means which co-ordinates printing with carriage movement.

